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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/843,998 | 04/27/2001 | Joseph A. Zierolf | 200017 USA | 1645 |

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EXAMINER

LABAZE, EDWYN

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2876

DATE MAILED: 07/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/843,998

Applicant(s)

ZIEROLF, JOSEPH A.

Examiner

EDWYN LABAZE

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-69 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-12, 17-28, 33-48 and 53-69 is/are rejected.
- 7) ☐ Claim(s) 13-16, 29-32 and 49-52 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because

The term "such as" (lines 2 and 3) is inappropriate. Correction is required. See MPEP

§ 608.01(b).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States

3. Claims 1-16, and 37-55 are rejected under 35 U.S.C. 102(b) as being anticipated by Gonzalez (4,656,944).

Re claim 1: Gonzalez discloses a well perforator system and method, which includes a responding device or receiver 30 (col.2, lines 31+) and an antenna 27a (col.2, lines 28+).

Re claims 2, 6, 38 and 42: Gonzalez teaches that the responding device 21 is a radio frequency identification device (col.4, lines 23+).

Re claims 3, 7, 39 and 43: Gonzalez discloses that the responding device is passive communicating by means of electromagnetic energy (col.4, lines 13+).

Re claims 4 and 40: Gonzalez discloses an antenna that extends substantially around the outer periphery (col.2, lines 28+).

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Re claims 5, 8 and 41: Gonzalez discloses a groove or conduit 29 in Fig 3 (col.2, lines 29+, and col.2, line 36+) in the outer surface, which positions the antenna thereof.

Re claims 9 and 45: Wisler et al. teaches that the groove 35a or 36a is annular or has a ring-shaped (col.2, lines 54+).

Re claim 10: Gonzalez discloses that the antenna 27a is disposed in the conduit 29 and extended around the outer periphery (see fig. 2).

Re claims 11 and 47: Gonzalez teaches that the assembly has a sealant positioned on each side of the housing and secures the antenna (col.2, lines 35+)

Re claims 12 and 48: Gonzalez discloses a second antenna 28a (col. 2, line 29)

Re claims 15 and 51: Gonzalez discloses that a portion of the well tubing has screw threads 52 (col. 2, line 45)

Re claim 37: Gonzalez teaches that the assembly includes a tubular 14 (col.2, line 6), a threaded collar 50 (col.2, line 44) secured to one end of the tubular 14, a responding device 30 (col.2, line 31+), and an antenna 27a connected to the responding device.

Re claim 53: Gonzalez discloses that the tubular 20 (col.2, line 13) is drill pipe/tube and the fluid conduit is drill string (see fig. 1) for use in a subterranean well.

Re claim 54: Gonzalez discloses that the tubular is tubing 14 (col 2, line 6) and the fluid conduit is tubing string (see Fig. 1) for use in a subterranean well.

Re claim 55: Gonzalez teaches that the tubular is pipe/tube 14 and the fluid conduit is a pipeline 10 (col.2, line 10).

4. Claims 17-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Wisler et al (5,530,358)

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Re claim 17: Wisler et al. teaches that the assembly includes a tubular 41 (col. 8, lines 3+), a responding device 99 (col. 8, lines 12+) and an antenna 127 (col. 8, lines 7+).

Re claims 18 and 22: Wisler et al. discloses that the responsive device 99 is a radio frequency identification device (col. 16, lines 56+).

Re claims 19 and 23: Wisler et al. teaches that the responding device is passive communicating by means of electromagnetic energy (col. 8, lines 13-16).

Re claim 20: Wisler et al. discloses that the antenna 91 or 93 (col. 9, lines 19+) extends substantially around the outer peripheral (Fig. 8)

Re claim 21: Wisler et al. teaches that the assembly includes a groove 355 in the outer surface, which positions the antenna pathway 357 (see Fig. 12c, d) (col. 9, lines 44+)

Re claim 24: Wisler et al. discloses that the groove 355 extends substantially around the outer peripheral (col. 9, lines 42+)

Re claim 25: Wisler et al. teaches that the groove is generally annular, shaped in the form of a ring or circumferential (col. 9, lines 47+).

Re claim 26: Wisler et al. discloses that the antenna extends substantially around the entire outer periphery of tubular member 381 (col. 10, lines 25+).

Re claim 27: Wisler et al. teaches that the assembly has a sealant positioned in the groove as to surround and secure the antenna (col. 10, lines 7-20).

Re claim 28: Wisler et al. discloses a second antenna 93 electrically connected to the responding device (col. 9, lines 20+)

Re claim 33: Wisler et al. discloses that the tubular is a drill pipe 13 (col. 6, line 1) and the fluid conduit is drill string 11 (col. 5, line 66) for use of subterranean well (col. 6, lines 4+).

Re claim 34: Wisler et al. teaches that the tubular is tubing 13 and the fluid conduit is a tubing string for use in a subterranean well (see Fig. 1A).

Re claim 35: Wisler et al. teaches that the tubular is pipe 13 and the fluid conduit is a pipeline 17 (col.5, lines 65+).

Re claim 36: Wisler et al. discloses that the assembly includes a tool to the tubular (col.14, lines 4+), a second responding device 165 (col.14, lines22+) and a second antenna181 electrically connected to the tool (col.14, lines 30+).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made

6. Claims 56-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gonzalez in view of Bauerschmidt et al. (U.S. 6,081,729).

The teachings of Gonzalez have been discussed above.

Gonzalez fails to disclose a transceiver positioning in the proximity interior and /or exterior of the tubular.

Bauerschmidt et al. teaches an encapsulated tubular conductor, which includes a transceiver 17 (col.4, lines 53+).

In view of Bauerschmidt et al.'s teaching, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to employ a transceiver wirelessly

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connected to a bus allowing the transfer of electric impulses and for transmitting and receiving radio frequency signals transmitted as a pulse or modulation signal. Transceivers, electronically designed of transmitters and receivers, receive the RF signals from an antenna, demodulate those RF signals to extract the information they carry and transmit the modulated RF signals via antenna. The information/data transmission can occur to and/or from the exterior and/or interior of the tubular. Furthermore, such modification would have an obvious extension as taught by Bauerschmidt et al. and therefore an obvious expedient.

Re claim 57: the teaching of Gonzalez as modified by Bauerschmidt et al. discloses an asset generally tubular or space housing 47 as defined by Gonzalez (col.2, lines 39+) and the transceiver along the exterior of the asset wirelessly positioned.

Re claims 58-59: the teaching of Gonzalez as modified by Bauerschmidt et al. discloses an asset generally tubular 10 as defined by Gonzalez (col.2, lines 6+) and the transceiver can be along the interior of the asset, wirelessly positioned.

Re claim 60: Gonzalez teaches that the responding device 21 is a radio frequency identification device (col.4, lines 23+).

Re claim 61: Gonzalez discloses that the responding device is passive communicating by means of electromagnetic energy (col.4, lines 13+).

7. Claims 62-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gonzalez as modified by Bauerschmidt et al. (U.S. 6,081,729) as applied to claims 56-61, and further in view of Mischenko et al. (U.S. 6,243,041). The teachings of Gonzalez as modified by Bauerschmidt et al. have been discussed above.

Gonzalez as modified by Bauerschmidt et al. fails to teach that there is no rotational orientation consideration between the transceiver and responding device via the antenna.

In view of Mischenko et al.'s teaching, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to combine the arrangement permitting the communication between the transceiver and the antenna regardless of the rotational orientation of the tubular. This arrangement rectifies the offset of errors by several mm in any direction and provides translational and rotational freedom to adjust variations during communication. Moreover, such modification would have an obvious extension as taught by Mischenko et al. and therefore an obvious expedient.

Re claim 63: the teaching of Gonzalez as modified by Bauerschmidt et al. discloses an asset generally tubular or space housing 47 as defined by Gonzalez (col.2, lines 39+) and the transceiver along the exterior of the asset wirelessly positioned.

Re claims 64-65: the teaching of Gonzalez as modified by Bauerschmidt et al. discloses an asset generally tubular 10 as defined by Gonzalez (col.2, lines 6+) and the transceiver can be along the interior of the asset, wirelessly positioned.

Re claim 66: Gonzalez teaches that the responding device 21 is a radio frequency identification device (col.4, lines 23+).

Re claim 67: Gonzalez discloses that the responding device is passive communicating by means of electromagnetic energy (col.4, lines 13+).

8. Claims 68-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gonzalez as modified by Thomas (U.S. 6,288,685).

The teachings of Gonzalez have been discussed above.

Gonzalez fails to disclose a transceiver and annular antenna.

Thomas teaches a serrated slot antenna, which includes a transceiver 34 (col.4, lines 53+), and an annular antenna 10 (col.2, lines 45+).

In view of Thomas's teaching, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to integrate a transceiver for transmitting RF and electromagnetic data signal and an annular antenna to permit the passage of the tubular therethrough, also to receive or to transmit signals to very high (microwaves) frequencies in different bands, up to 400 MHz, and to be able to emit plural frequencies each at dual polarizations. Therefore, such modification would have been an obvious extension of the transceiver with an annular antenna as taught by Thomas, and therefore an obvious expedient

Re claim 69 The teachings of Gonzalez as modified by Thomas and further in view of Mischenko et al. have been discussed above. The communication between of the transceiver and the responding device via the antenna is permitted regardless of the rotational orientation (6,243,041 col.7, lines 39+).

Allowable Subject Matter

9. Claims 13-16, 29-32, and 49-52 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dailey et al. (U.S. 5,160,925) discloses a short communication link for downhole measurement-while-drilling system.

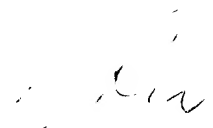
Soulier (U.S. 5,394,141) teaches a method and apparatus for transmitting information between equipment at the bottom of a drilling operation and the surface.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EDWYN LABAZE whose telephone number is (703) 305-5437. The examiner can normally be reached on 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (703) 305-3503. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

el
July 8, 2002


THIEN M. LE
PRIMARY EXAMINER